

Fabry-Perot for the Integrated Direct Detection Lidar (FIDDL)

Completed Technology Project (2012 - 2015)



Project Introduction

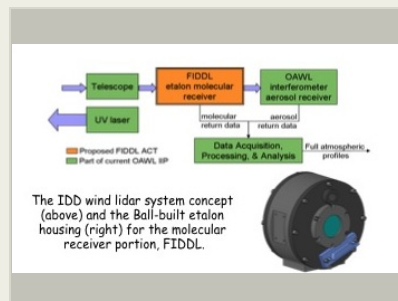
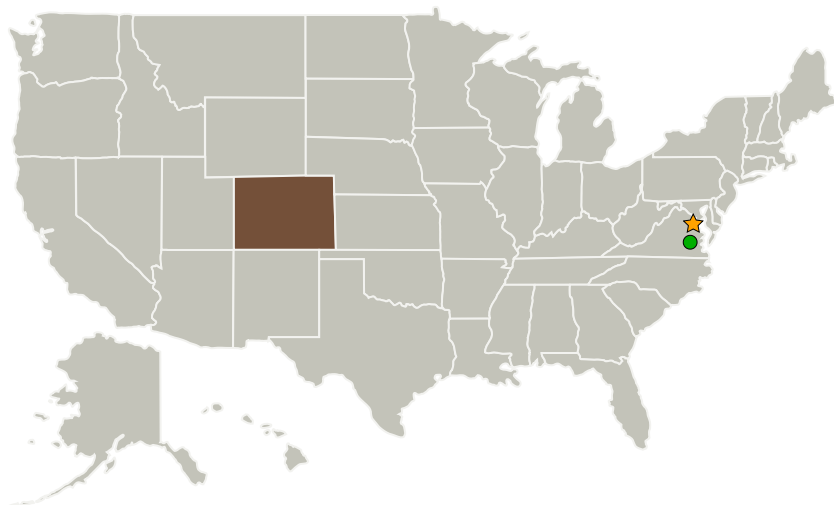
Develop an etalon front end receiver (FIDDL) and combine it with the Optical Autocovariance Wind Lidar (OAWL) for an integrated direct detection (IDD) wind lidar.

Demonstrate the IDD hybrid system measuring winds from both molecular and aerosol returns using a single lidar.

The hybrid system will significantly reduce the size and cost of a 3D Winds mission (on the order of 20-30% based on aperture size) compared to the current hybrid 2-laser approach.

Performance goals are < 1 m/s wind estimate precision for the etalon sub-system.

Primary U.S. Work Locations and Key Partners



Project Image Fabry-Perot for the Integrated Direct Detection Lidar (FIDDL)

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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Lead Center / Facility:

NASA Headquarters (HQ)

Responsible Program:

Earth Science

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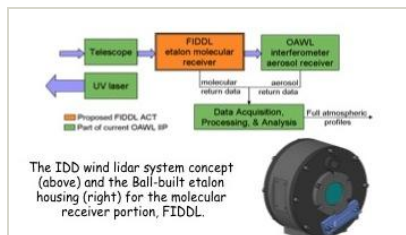
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Organizations Performing Work	Role	Type	Location
★ NASA Headquarters(HQ)	Lead Organization	NASA Center	Washington, District of Columbia
Ball Aerospace & Technologies Corporation	Supporting Organization	Industry	Boulder, Colorado
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations

Colorado

Images

**10481-1360009012962.jpg**

Project Image Fabry-Perot for the Integrated Direct Detection Lidar (FIDDL)

(https://techport.nasa.gov/image/1577)

Project Management

Program Director:

George J Komar

Principal Investigator:

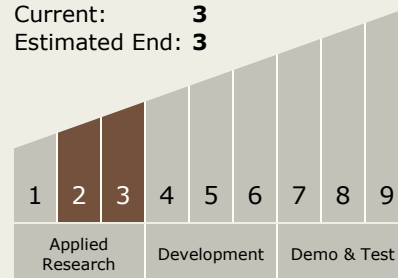
Sara Tucker

Technology Maturity (TRL)

Start: 2

Current: 3

Estimated End: 3



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - TX08.1 Remote Sensing Instruments/Sensors
 - TX08.1.5 Lasers

Target Destination

Earth